

What is claimed is:

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1 1. A method for cleaning disc drive components comprising the steps of:
2 receiving a disc drive component into an oxygen-containing enclosure;
3 exposing the disc drive component within the oxygen-containing enclosure with
4 ozone to oxidize organic material on the disc drive component and convert the organic
5 material to water vapor and carbon dioxide; and
6 venting the carbon dioxide and any remaining ozone from the enclosure.
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- 1 2. A method as recited in claim 1, wherein the step of exposing comprises steps
2 of:
3 generating ultra-violet (UV) radiation;
4 exposing a surface of the disc drive component with the UV radiation;
5 reacting oxygen within the vicinity of the exposed surface with the UV radiation to
6 create ozone within the vicinity of the exposed surface.
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- 1 3. A method as recited in claim 2, wherein the step of generating UV radiation
2 comprises energizing a mercury vapor lamp.
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- 1 4. A method as recited in claim 1, wherein the step of venting comprises
2 coupling a vacuum source to the enclosure.
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- 1 5. A method as recited in claim 1, wherein the step of venting comprises
2 coupling an ozone destroyer to the enclosure.
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- 1 6. A method as recited in claim 1, wherein the step of venting comprises
2 coupling a vacuum source and ozone destroyer to the enclosure.
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1 7. A method as recited in claim 1, wherein the step of exposing comprises
2 generating ozone with an electronic ozone generator and providing the generated ozone to the
3 enclosure.

1 8. A method as recited in claim 2, wherein the step of exposing further comprises
2 generating ozone with an electronic ozone generator and providing the generated ozone to the
3 enclosure.

1 9. A method as recited in claim 1, wherein, prior to the step of receiving a disc
2 drive component into an oxygen containing enclosure, the method further comprises steps of:
3 receiving the disc drive component on a rotary support member;
4 rotating the rotary support member and disc drive component together at a rotation
5 speed to impart a centrifugal force on any excess lubricant on the disc drive component of
6 sufficient magnitude to draw the excess lubricant off of the disc drive component.

1 10. A method as recited in claim 1, further comprising steps of:
2 receiving the disc drive component on a rotary support member;
3 rotating the rotary support member and disc drive component together at a rotation
4 speed to impart a centrifugal force on any excess lubricant on the disc drive component of
5 sufficient magnitude to draw the excess lubricant off of the disc drive component.

1 11. A method as recited in claim 10, wherein said step of rotating comprises
2 rotating the rotary support member and disc drive component together at a rotation speed of
3 between _____ and _____ revolutions per minute.

1 12. A method as recited in claim 10, further comprising steps of disposing a
2 lubricant-catching member adjacent the disc drive component received on the rotary support
3 member and receiving said excess lubricant drawn off of the disc drive component with the
4 lubricant-catching member, while the rotary support member and disc drive component are
5 rotated.

1 13. A method as recited in claim 12, further comprising steps of coupling a
2 vacuum source to the lubricant-catching member and suctioning lubricant received by the
3 lubricant-catching member with the vacuum source.

1 14. A method for cleaning excess lubricant from disc drive motor components
2 comprising steps of:
3 receiving an assembled disc drive motor on a rotary support member;
4 rotating the rotary support member and disc drive motor together at a rotation speed
5 to impart a centrifugal force on any excess lubricant contained by the disc drive motor of
6 sufficient magnitude to draw the excess lubricant from the disc drive motor.

1 15. A method as recited in claim 14, further comprising steps of disposing a fluid
2 catching surface adjacent the rotary support member and receiving excess lubricant drawn off
3 of the disc drive motor by centrifugal force with the fluid catching surface.

1 16. A method as recited in claim 14, wherein the step of receiving comprises
2 placing the disc drive component on a support surface.

1 17. Apparatus for cleaning disc drive components, the apparatus comprising:
2 an enclosure defining an interior having an oxygen-containing environment;
3 a support platform disposed within the oxygen-containing environment of the interior
4 of the enclosure, for supporting a disc drive component within the oxygen-containing
5 environment of the enclosure;
6 an ozone source, for providing sufficient ozone in the vicinity of the disc drive
7 component within the enclosure to oxidize organic material on the disc drive component and
8 convert the organic material to water vapor and carbon dioxide; and
9 a vent provided on in the enclosure, for venting the carbon dioxide and any remaining
10 ozone from the enclosure.

1 18. Apparatus as recited in claim 17, wherein the ozone source comprises an ultra-
2 violet (UV) radiation source disposed within the enclosure for exposing a surface of the disc
3 drive component with sufficient UV radiation to react with oxygen within the vicinity of the
4 exposed surface to create ozone within the vicinity of the exposed surface.

1 19. Apparatus as recited in claim 18, wherein the UV radiation source comprises a
2 mercury vapor lamp.

1 20. Apparatus as recited in claim 17, further comprising a vacuum source coupled
2 to the vent.

1 21. Apparatus as recited in claim 17, further comprising an ozone destroyer
2 coupled to the vent.

1 22. Apparatus as recited in claim 17, further comprising a vacuum source and
2 ozone destroyer coupled to the vent.

1 23. Apparatus as recited in claim 17, wherein the ozone source comprises an
2 electronic ozone generator disposed within the enclosure.

1 24. Apparatus as recited in claim 17, wherein the ozone source comprises an
2 electronic ozone generator and an ultraviolet radiation source disposed within the enclosure.

1 25. Apparatus for cleaning excess lubricant from disc drive components, the
2 apparatus comprising:
3 a rotary support member for receiving an assembled disc drive component;
4 a rotary drive motor coupled to the rotary support member for rotating the rotary
5 support member and disc drive motor supported thereon together at a rotation speed to impart
6 a centrifugal force on any excess lubricant contained by the disc drive motor of sufficient
7 magnitude to draw the excess lubricant from the disc drive motor.

1 26. Apparatus as recited in claim 25, further comprising a fluid catching surface
2 supportable adjacent the rotary support member in a position to receive excess lubricant
3 drawn off of the disc drive motor by centrifugal force.

1 27. A system for cleaning disc drive components, the system comprising:
2 a rotary support member for receiving an assembled disc drive component;
3 a rotary drive motor coupled to the rotary support member for rotating the rotary
4 support member and disc drive motor supported thereon together at a rotation speed to impart
5 a centrifugal force on any excess lubricant contained by the disc drive motor of sufficient
6 magnitude to draw the excess lubricant from the disc drive motor;
7 an enclosure defining an interior having an oxygen-containing environment;
8 a support platform disposed within the oxygen-containing environment of the interior
9 of the enclosure, for supporting a disc drive component within the oxygen-containing
10 environment of the enclosure, after the component is removed from the rotary support
11 member;
12 an ozone source, for providing sufficient ozone in the vicinity of the disc drive
13 component within the enclosure to oxidize organic material on the disc drive component and
14 convert the organic material to water vapor and carbon dioxide; and
15 a vent provided on in the enclosure, for venting the carbon dioxide and any remaining
16 ozone from the enclosure.

1 28. Apparatus for cleaning a disc drive component comprising:
2 a support member for supporting a disc drive component; and
3 means for cleaning the disc drive component with ozone while supported on the
4 support member.

1 29. Apparatus for cleaning a disc drive component comprising:
2 a support member for supporting a disc drive component; and
3 means for cleaning the disc drive component with centrifugal force while supported
4 on the support member.